



NATURAL RESOURCES DEFENSE COUNCIL

November 8, 2010

The Honorable Lisa P. Jackson
Administrator
U. S. Environmental Protection Agency
Water Docket, Mailcode: 28221T
1200 Pennsylvania Ave., NW
Washington, DC 20460

Re: Chesapeake Bay TMDL -- Docket no. EPA-R03-OW-2010-0736

Dear Administrator Jackson:

On behalf of its members who reside and recreate in the Chesapeake Bay watershed, NRDC respectfully submits these comments on the Environmental Protection Agency's (EPA) Draft Chesapeake Bay Total Maximum Daily Load (TMDL). 75 Fed. Reg. 57776, *et seq.* The Natural Resources Defense Council (NRDC) is a national nonprofit environmental organization with 1.3 million members and online activists. NRDC uses law, science and the support of its members to safeguard the Earth: its people, its plants and animals, and the natural systems on which all life depends. One of NRDC's priorities is to protect and restore the integrity of water systems that sustain and benefit its members. As part of its efforts to achieve this goal, NRDC has undertaken a wide range of activities to stem water pollution from numerous sources. NRDC has engaged in advocacy with executive and legislative branch officials, has produced material for public education, and has participated in litigation, all to promote better regulation of water pollution.

NRDC salutes EPA and the staff of the Chesapeake Bay watershed states for their dedication and commitment to developing this ambitious tool for restoring the vibrancy of the Bay. We look forward to working with the various state and federal agencies in our collaborative efforts to move forward toward a healthy Bay after decades of ground-laying work and missed opportunities. While the Draft TMDL charts a strong and correct course, it is only natural that there will be numerous areas where revision may improve the ultimate utility of the pollution control allocations and approaches outlined in this complex document, and in the state Watershed Implementation Plans (WIPs) that will guide efforts to attain its goals. NRDC offers these comments in the spirit of suggesting such improvements, to the Draft TMDL itself, the calculations and allocations at its heart, and to EPA's review of the revised draft WIPs.

1. The Bay TMDL Is Necessary to Restore Health to the Bay and Overcome Decades of Missed Deadlines and Opportunities.

The Chesapeake Bay is the nation's largest estuary and the third largest estuary in the world. Considered a national treasure, the Bay drains an immense 64,000 square miles in six states: New York, Pennsylvania, West Virginia, Delaware, Maryland and Virginia, as well as Washington, D.C. The watershed is not only the largest in landscape, but also population. The area's population is growing by more than 170,000 residents a year, and has surpassed 17 million people.

Historically, the Bay has been an abundant source of seafood, supporting a vibrant crab and oyster population and providing habitat for more than 3,600 species of plants and animals. Yet since the 1930s, the health of the bay has been rapidly deteriorating. Excess nutrients and sediment runoff have caused a number of environmental problems, including "dead zones" in the Bay that contain too little oxygen to support aquatic life. Oyster and crab populations have been largely destroyed. Today, although more than \$4 billion has been spent on restoration efforts since 1995, the waters of the Bay remain "severely degraded".

For more than thirty years, federal and state governments have sought to reverse the decline of the Bay's water quality through legislative, regulatory, and voluntary programs. These efforts have led to the creation of inter-governmental working groups, a dedicated EPA program, office, and the amendment of the Clean Water Act with Chesapeake Bay-specific provisions. The lack of progress by the states in completing TMDLs for these Bay tributaries eventually led to litigation. In 1998, a lawsuit filed by the American Canoe and American Littoral Society against EPA resulted in settlement in which the Agency would ensure that Virginia developed TMDLs for all of its impaired Bay tributaries and waters by May 1, 2010. If Virginia failed in this task, EPA would be required to complete the TMDLs by May 2011. Similar consent decrees have resolved litigation over the failure of Delaware and the District of Columbia to establish TMDLs for their Bay waters.

In June, 2000, after decades of effort and the expenditure of billions of dollars failed to achieve the desired restoration of the Bay's health, the Chesapeake Executive Council signed the *Chesapeake 2000* agreement. This Agreement created new, stronger nutrient and sediment reduction goals, buttressed by a package of regulatory and voluntary actions intended to either ensure that the 2010 clean up goals would be met, or that EPA issued its own TMDL no later than May 1, 2011. In October 2007, the seven watershed jurisdictions and EPA reached consensus that EPA would establish the Bay TMDL on behalf of the jurisdictions with a target restoration date of 2025.¹ EPA's release of this Draft TMDL, and eventual issuance of a final TMDL for the Bay, is the culmination of this lengthy process, and critical to the ultimate reduction of the excess nutrients and sediment that have diminished the health and productivity of this national treasure.

¹ U.S. EPA, Draft Chesapeake Bay Total Maximum Daily Load, at p. 1-5 (Sept. 24, 2010) (hereinafter "Draft TMDL").

2. EPA Has A Legal Obligation to Develop the TMDL and Assure It Will Be Achieved

The Bay TMDL is premised upon, and is essential to implement, EPA's general obligations under the Clean Water Act and its specific duties concerning the Chesapeake Bay watershed. As summarized in detail in section 1.4 of the draft TMDL and the comments submitted by the Choose Clean Water Coalition submitted on this draft TMDL, the Agency's action in establishing the TMDL and insisting on watershed implementation plans (WIPs) from the Bay states is consistent with sections 303(d) and 117 of the Clean Water Act, the resolution of a number of lawsuits concerning the Bay and its tributaries, and EPA regulations and guidance.

EPA notes that it is appropriate for the Agency to establish a TMDL under the authority of section 303 of the Act in a situation like that in the Bay region,

where impaired waters have been identified on jurisdictions' section 303(d) lists for many years, where the states in question have decided not to establish their own TMDLs for those waters, where EPA is establishing a TMDL for those waters at the discretion or, and in cooperation with, the jurisdictions in question, and where those waters are part of an interrelated and interstate water system. . . .

While this is by no means the only circumstance in which EPA needs to act, NRDC agrees that the current situation in the Bay demands EPA action.²

In addition, NRDC agrees that section 117 and the Agency's TMDL authority provide authority for EPA's "accountability framework," which includes submission of WIPs, biennial milestones for progress, and federal actions as a consequence of state failures. First, section 117 directs EPA to "ensure that management plans are developed and implementation is begun by signatories to the Chesapeake Bay Agreement to achieve and maintain," among other things, "the nutrient goals of the Chesapeake Bay Agreement for the quantity of nitrogen and phosphorus entering the Chesapeake Bay and its watershed [and] the water quality requirements necessary to restore living resources in the Chesapeake Bay ecosystem. . . ."³ Second, as EPA's TMDL guidance discusses:

When a TMDL is developed for waters impaired by both point and nonpoint sources, and the WLA is based on an assumption that nonpoint source load reductions will occur, EPA's 1991 TMDL Guidance states that the TMDL should provide reasonable assurances that nonpoint source control measures will achieve expected load reductions in order for the TMDL to be approvable. This information is necessary for EPA to determine that the

² See generally 33 U.S.C. 1313(d)(2) (concerning EPA action where states fail to submit approvable TMDLs); *Dioxin/Organochlorine Center v. Clarke*, 57 F.3d 1517, 1520 (9th Cir. 1995) (Oregon, Washington & Idaho "requested the EPA to issue the proposed and final TMDL as a federal action under the authority of § 1313(d)(2)").

³ 33 U.S.C. §§ 1267(g)(1)(A) & (B).

TMDL, including the load and wasteload allocations, has been established at a level necessary to implement water quality standards.⁴

This position is consistent with EPA's TMDL regulations, which provide for flexibility in allocating the loads between point and nonpoint sources, something that is appropriate only if EPA can be equally confident that the more stringent load allocations will in fact be realized as EPA can be that wasteload allocations (typically embodied in NPDES permits) will be met.⁵ Accordingly, EPA can insist that state WIPs' reflect actions that are sufficient to provide "reasonable assurance" that nonpoint source reductions will actually occur. Finally, with respect to the signatories to the Chesapeake 2000 agreement, section 117's direction to EPA to "ensure" that states not only plan to make needed reductions, but also implement such reductions, empowers the Agency to demand that Maryland, Virginia, Pennsylvania, and the District of Columbia provide even more of a guarantee that WLAs and LAs will be met. Accordingly, we support EPA's expectation that the signatory states will "develop Plans to achieve needed nutrient and sediment reductions whose control actions are based on regulations, permits or otherwise enforceable agreements that apply to all major sources of these pollutants, including non-point sources."⁶

EPA also has significant authority to secure reductions in nutrients and sediment directly through regulations it promulgates or through improved oversight and enforcement of state CWA programs. For example, the Agency can expand the universe of sources of stormwater pollution for which it develops NPDES permit requirements under its "residual designation" authority.⁷ We appreciate EPA's willingness to implement residual designation and other "consequences" in the event that states do not make expected progress in meeting their reduction milestones.⁸ However, we note that some of these initiatives are things that EPA should be doing in any event, such as objecting to unlawful permits, promulgating local nutrient water quality standards, and establishing finer-scale wasteload and load allocations for the TMDL (as discussed in the next section). Some other actions may need to be implemented in order to meet other water quality goals, or may be folded into other Clean Water Act programs.⁹

⁴ U.S. EPA, "Guidelines for Reviewing TMDLs Under Existing Regulations Issued in 1992," available at <http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/final52002.cfm>.

⁵ See generally 40 C.F.R. § 130.2(i) ("If Best Management Practices (BMPs) or other nonpoint source pollution controls make more stringent load allocations practicable, then wasteload allocations can be made less stringent.")

⁶ Letter from William C. Early, Acting EPA Region III Administrator, to L. Preston Bryant, Jr., Virginia Secretary of Natural Resources, at 16 (Nov. 4, 2009).

⁷ See 33 U.S.C. § 1342(p)(2)(E).

⁸ Letter from Shawn M. Garvin, EPA Region III Administrator, to L. Preston Bryant, Jr., Virginia Secretary of Natural Resources, at 3-4 (Dec. 29, 2009).

⁹ See, e.g., 74 Fed. Reg. 68,617 (Dec. 28, 2009) (seeking comment on regulatory options for adequately controlling stormwater in national rulemaking).

3. EPA's Stringent Backstop Allocations Comprise a Reasonable and Legally Warranted Response to Inadequate State WIPs.

NRDC is supportive of the general approach to backstop allocations that EPA has chosen, which focuses for the most part on lowering point source WLAs to better ensure that needed reductions will take place. We agree with this approach because EPA has more authority to guarantee that reductions occur as needed from point sources (including, for instance, objecting to NPDES permits with inadequate WQBELs). However, NRDC stresses that EPA must commit to expeditiously establish the allocations and take the other actions outlined in the backstop TMDLs, rather than simply being prepared to do so upon failure of any state to meet a deadline or other requirement of its WIP or 2 Year Milestones.¹⁰

NRDC is concerned by one other element of the backstop allocations. EPA indicates that its backstop will include “finer-scale allocations,” such as “individual WLAs for the significant municipal and industrial wastewater discharging facilities and sector-specific aggregate WLAs for stormwater, CAFOs, and nonsignificant municipal and industrial wastewater discharging facilities” in the non-tidal states (PA, WV, NY). This is something that already exists for the tidal jurisdictions. If we understand correctly, this means that the non-tidal jurisdictions presently have WLAs only for point sources generally, and we believe that finer-scale allocations are necessary irrespective of where the discharge is in the watershed. For example, EPA guidance provides that, in the case of stormwater discharges,

EPA recommends expressing the wasteload allocation in the TMDL as either a single number for all NPDES-regulated storm water discharges, or when information allows, as different WLAs for different identifiable categories, e.g., municipal storm water as distinguished from storm water discharges from construction sites or municipal storm water discharges from City A as distinguished from City B. These categories should be defined as narrowly as available information allows (e.g., for municipalities, separate WLAs for each municipality and for industrial sources, separate WLAs for different types of industrial storm water sources or dischargers).¹¹

In other words, EPA seems to contemplate that there will always be at least a WLA for stormwater discharges, and a TMDL should have individual WLAs for identifiable segments of the stormwater universe. In our view, this should also be the case for other point source sectors – CAFOs, non-significant industrial & municipal dischargers, e.g. – and significant facilities should have easily-calculable individual WLAs. Given that NPDES permits will in any event have to have WQBELs that “are consistent with the assumptions and requirements of any available wasteload allocation for the discharge,”¹² this work is essential anyway.

¹⁰ See generally 33 U.S.C. 1313(d)(2) (providing for corrective EPA action within 60 days of inadequate TMDL submission).

¹¹ Memorandum from Robert H. Wayland, III, Director, U.S. EPA Office of Wetlands, Oceans and Watersheds & James A. Hanlon, Director, U.S. EPA Office of Wastewater Management, to U.S. EPA Regional Water Division Directors (Nov. 22, 2002), available at http://www.epa.gov/reg3wapd/tmdl/pa_tmdl/wissahickon/WissahickonTMDLI.pdf.

¹² 40 CFR 122.44(d)(1)(vii)(B).

In light of the deficiencies in the Draft Phase I WIPs, NRDC generally agrees with EPA's commitment to assert a range of backstop TMDLs where state WIPs failed to either meet expectations or failed to account for sufficient progress toward nutrient and sediment reductions. The increasing degrees of severity in EPA's backstop responses appear soundly tailored to achieve reductions by reducing allocations to point sources subject to NPDES permit and other oversight authorities. The backstop adjustments of allocations where state WIPs are too speculative in one of several ways, including "[h]eavy reliance on trading to finance reductions and offset growth, but no commitment to adopt critical trading components such as clear baselines, liability, enforceability, tracking, and regulatory drivers" are reasonable exercises of EPA's responsibility to require "reasonable assurances" that states will reduce pollutant loading to TMDL allocation levels.¹³ As outlined above, in order to ensure that states meet their TMDL allocations EPA must be prepared to invoke the discretionary responses it outlined in the Agency's December 29, 2009 "Consequences Letter."¹⁴ In particular, EPA's authority to object to NPDES permits that fail to incorporate sufficiently stringent WQBELs will be crucial to maintaining consistent attainment of WLAs across the watershed.

We are especially supportive of EPA's insistence that reductions can be accomplished through significant commitment to urban stormwater retrofit efforts; in general, Bay States failed to appreciate and plan for meaningful improvements in the category of pollution control practices.

4. EPA Has the Authority and Responsibility to Require More Rigorous State Efforts to Reduce Pollutant Loadings to the Chesapeake Bay.

Throughout the TMDL, EPA has expressed its willingness to defer to the Bay States' identification and scheduling of specific programs and practices to control pollutant loadings. Some measure of deference is indeed appropriate, given the need for flexible responses to local conditions. However, EPA should not allow the states to exercise unbridled discretion in designing and implementing nutrient and sediment management practices. The goal of the iterative approach embodied in the three phases of WIP preparation is to select, prioritize and localize the practices that are most locally appropriate to control nutrient and sediment loadings to the Bay.¹⁵ In the recently submitted draft Phase I WIPs, Bay States were expected to "include a description of the authorities, actions, and, to the extent possible, control measures that will be implemented to achieve these point source and nonpoint source target loads and TMDL allocations."¹⁶ Naturally, many of the control practices and policies are well known to state agencies, EPA and the affected public after decades of study and evolution in nutrient and sediment management. State, federal, and industrial best practices manuals are replete with standards and specifications for practices and control measures that are currently available to

¹³ See Draft TMDL at pp. 8-6, 8-7.

¹⁴ See Letter from Shawn Garvin, EPA Region 3 Administrator to Hon. L. Preston Bryant, Virginia Secretary of Natural Resources, December 29, 2009.

¹⁵ See Shawn Garvin, EPA Region 3 Administrator to Hon. L. Preston Bryant, Virginia Secretary of Natural Resources, November 4, 2009 ("WIP Expectations Letter") at 4.

¹⁶ *Id.*

achieve a desired level of pollutant management performance. In order to ensure consistency in the approaches identified by the states, EPA must clearly set forth baseline standards expressing the Agency's expectations for threshold levels of performance.

For example, between the six Bay States (excepting the District of Columbia), there is a wide range of standards relating to nutrient management planning and fertilizer application for agriculture operations. Some, but not all, states rely on USDA NRCS conservation practice standards to inform nutrient management planning and application. There is considerable variation in the states' approaches to addressing soil phosphorus levels and restricting the application of excess fertilizer to areas of high phosphorus concentration. It is reasonable to assume that this inconsistency will continue to frustrate uniform responses to nutrient loadings throughout the Bay watershed. In its review of revised Phase I WIPs, EPA can reasonably insist on reasonable assurances that agricultural loadings will be reduced through practices that achieve specific, minimum standards of performance. When EPA's expectations for such reasonable assurances are not met, EPA may premise its backstop load allocations on the implementation of specific practices that will be sufficient to meet these targets. In this regard, the recently issued Guidance for Federal Land Management Activities in the Chesapeake Bay Watershed contains a suite of Implementation Measures to reduce nutrient and sediment pollution from agricultural operations.¹⁷ This document, reflecting an array of widely accepted and adopted practices, may serve as a foundation for an explicit set of baseline standards for all agricultural operations in the Bay watershed.

Likewise, reducing the impacts associated with stormwater flows from existing areas of development is crucial to improving Bay water quality.¹⁸ In its backstop allocations, EPA is poised to establish wasteload allocations that would effectively push municipal separate stormwater systems to address pollution from existing urban stormwater flows. While this requirement is a significant and forward step, the improvements in water quality expected from such retrofit efforts may be undermined by the absence of a readily applicable definition or standard that embodies acceptable best practices for urban stormwater retrofits. Again, EPA has demonstrated leadership in this regard through the approaches detailed in the Land Management Guidance. However, even that document lacked objective, measureable baselines for retrofit performance

Earlier this year, EPA released a memorandum outlining an approach to urban stormwater permitting that clarified EPA's expectations for MS4 permits that contain clear and enforceable measures, consistent with federal regulations and protective of water quality.¹⁹ The findings of the National Research Committee report on urban stormwater contained a preference for stormwater management practices that preserved or restored hydrologic balance to areas of

¹⁷ US EPA, *Guidance for Federal Land Management in the Chesapeake Bay Watershed*, May 12, 2010. Available at http://www.epa.gov/owow_keep/NPS/chesbay502/.

¹⁸ See Draft TMDL at p. 4-6.

¹⁹ US EPA, *Urban Stormwater Approach for the Mid-Atlantic Region and Chesapeake Bay Watershed*, July 2010.

development.²⁰ This memorandum presents a positive opportunity for EPA and state and local stormwater managers to adopt approaches to urban stormwater management that will result in meaningful protections of Bay waters and reductions of pollutants, including excess volume, from stormwater discharges. In order to have this effect, however, the memorandum needs to be effectively integrated into EPA review of Bay state MS4 permits and Watershed Implementation Plans. EPA should rely upon the memorandum in evaluating WIP goals and milestones relating to controlling urban stormwater and the standards and regulatory measures it describes should form the basis of EPA's backstop allocations for MS4s.

On-site wastewater treatment systems are among the more significant non-point sources of nutrient loadings in the Bay watershed. Maryland estimates that loadings from households served by on-site septic systems are five times greater than those served by centralized sewers.²¹ However, reducing nutrient loads from septic systems can be challenging owing to their wide dispersion and private ownership. Not surprisingly, the Bay states' septic programs reflect a range of commitments and goals. Maryland and Delaware both describe responsive septic upgrade and management programs, with regulatory reforms and funding streams.²² Virginia, Pennsylvania, and New York have less well-defined efforts devoted to improving septic performance. As with agriculture and urban runoff, the lack of specificity, consistency and common levels of commitment will undermine effective efforts to address this source of pollution across the entire Bay watershed. In order to effectively cure this problem, EPA's review of state WIPs should take into consideration the importance of baseline standards and explicit programs for both new on-site treatment systems and the rehabilitation or management of existing systems. State programs including detailed programs to address septic systems through such standards provide considerably greater "reasonable assurance" that loadings from this sector will be reduced. Again, in the Land Management Guidance the Agency has made an initial effort at describing a set of standards standard practices or approaches that lend themselves to universal application across the watershed; these standards should inform EPA's calculation of backstop allocations and can be stressed as models for the various activities covered by the guidance.

5. EPA Must Take Steps to Address Specific concerns with the Draft TMDL and WIPs.

a. Gap Filling Strategies and "Reasonable Assurance" Proffered by the States Are Inadequate.

Ultimately, the success of the Bay TMDL depends in large measure on EPA's ability to ensure that Bay jurisdictions provide "reasonable assurance" that their WLAs and LAs are properly allocated and achieved. As EPA indicates, "reasonable assurance" that WLAs are achieved will be provided by NPDES permit terms that reflect the load reduction needs of the TMDL.²³ Providing "reasonable assurance" that nonpoint source LAs "will in fact be achieved"

²⁰ National Research Council, *Urban Stormwater Management in the United States*, National Academies Press, Washington, DC (2009)

²¹ MD WIP at ES-9

²² See, e.g., DE WIP at 42-49, MD WIP at 2-7 to 2-8

²³ Draft TMDL at p. 7-2.

requires considerably more, and more complicated effort. While the TMDL goes some way toward satisfying this requirement, there is considerable room for firmer, more protective stances with regard to both point and nonpoint sources.

Because the entire Bay TMDL process is dependent upon an unfolding mechanism driven by improved accountability and adaptive response to successes and shortcomings, EPA must ensure that the initial accountability foundation is based on a frank critique of state efforts to date. This is particularly appropriate given the role that progress toward meeting 2 Year Milestones plays in meeting both the criteria of each WIP and in providing reasonable assurance of progress toward meeting allocations. Bay States have been working to identify and implement 2 Year Milestones since May 2009, with plans to meet these commitments by December 2011. As the Chesapeake Bay Foundation (CBF) identified in a series of letters to Region 3 Administrator Shawn Garvin and the state environmental secretaries, every Bay State has fallen significantly short of many of the metrics that would demonstrate reasonable progress toward meeting Milestones by this date.²⁴ CBF found that, in Virginia, “little new was being done to restore the Chesapeake Bay and its tidal tributaries,” and that indeed, actions that had been pledged or actually initiated were being cut back. Maryland “fell considerably short” of implementing the most significant nitrogen reducing milestone projects to which it had committed. Pennsylvania is substantially behind schedule in bringing its agricultural operations under nutrient management plans.²⁵

The backlog of NPDES permits in most states is one further example of the failure to take basic steps toward accountability and progress. States with significant numbers of expired permits typically lack the capacity to administer and oversee an effective permitting system. Failure to maintain up-to-date permits should be seen as a major red flag in reasonable assurance reviews as state agencies will need to rewrite all permits in a timely fashion to meet TMDL allocations. Compliance with permits is a powerful, effective means of meeting pollutant discharge reduction goals, yet most of the states are operating with large numbers of dischargers operating under expired permits. EPA must ensure that states are adequately writing, renewing and monitoring permit programs to ensure that they incorporate wasteload allocations under the TMDL.

Most troublingly, the draft WIPs submitted by the states generally fail to address these shortcomings or provide clear, definite measures to address them by accelerating achievement rates over the remainder of the 2 Year Milestone period. Maryland’s draft WIP is illustrative of this weakness, though by no means unique. In many respects, Maryland, like its sister Bay States, has fallen behind the implementation rates necessary to meet the goals of the first of its 2 year Milestones. For instance, among the gap closing strategies outlined in its WIP, Maryland plans to dramatically increase the planting of cover crops to reduce nitrogen flows from agricultural fields. However by the spring of 2010 it had only met 16% of its 2 Year Milestone goal. Yet, Maryland’s WIP provides absolutely no discussion of actions it will take to correct this shortfall or ensure reasonable progress toward its 2 Year Milestones. CBF and others have

²⁴ See Letter from Roy Hoagland, Chesapeake Bay Foundation to Shawn Garvin, EPA Region 3 Administrator, Aug. 10, 2010, with enclosures.

²⁵ *Id.*

pointed to specific projects that Maryland and other Bay States must successfully implement if the 2 Year Milestones are to be achieved with sufficient rigor to provide “reasonable assurance” that TMDL WLAs and LAs will be achieved. As a result of the notable failure of most draft WIPs to address shortcomings in their 2 Year Milestones, in evaluating the revised Phase I WIPS, EPA must demand that Bay States identify specific measures and commit to accelerate progress toward meeting these goals.

EPA’s reliance on many programs identified in state WIPs, even in Phase I form, as indicators of “reasonable assurance” is undone by the widespread and significant shortcomings in these documents. All of the draft WIPs suffer from a lack of specific detail or commitment to filling gaps between the allocations and current loads. This is particularly, and disturbingly, true for state-led programs intended to achieve reductions from agricultural, urban stormwater, and on-site treatment (septic) loads. No state was able to firmly and satisfactorily demonstrate a strategy to address gaps in funding for voluntary BMP, technical assistance, or compliance/oversight programs. Despite assurances of widespread adoption of nutrient management planning on AFO/CAFOs throughout the watershed, most states were unable to provide assurances of such high levels or outline mechanisms for updating NMP standards to reflect contemporary, federal best practices. Most states failed to identify, or create, binding and enforceable commitments for reductions from agricultural, stormwater, and septic sources. Almost uniformly, Bay states were unwilling or unable to commit to initiating regulatory or legislative changes necessary to update pollution controls.

While we hope for greater assurances in the revised WIPs due to EPA before the issuance of the Final TMDL, we have significant concerns that the level of assurances so far provided by the states falls far short of the mark. We encourage EPA to maintain its strong backstop pressure, and to insist that revised Phase I WIPs fully address the shortcomings identified by the Agency’s review of the initial drafts. EPA should not accept, as “reasonable assurance,” revised WIPs that do not envision specific binding commitments and other structures to assure that adequate funding, policies, and regulations are in place to assure that load reductions will be achieved.

Most, if not all, Bay States envision relying on considerably expanded nutrient reduction credit trading to offset new or continued discharges. The challenges of reducing overall discharges through a trading mechanism is discussed elsewhere in this comment, however the reliance on this mechanism, through partially operational or undefined trading programs, raises serious “reasonable assurance” concerns. To date, current programs in Pennsylvania and other Bay states have only handled a handful of trades. Clarification of baseline requirements and program design features will require some time before offset programs can be relied upon to accommodate new discharges. In addition, there are a number of states where enforcement of existing policy or law could achieve substantial pollution reductions. Therefore, particularly in the stormwater sector, it is important for Bay states to identify tools to accommodate growth beyond offsets.

b. Urban Stormwater Programs Are Inadequate

Stormwater, both from NPDES permitted MS4s and from unpermitted sources, plays a significant role in nutrient and sediment loadings to the Bay. EPA estimates that existing NPDES MS4 areas contributed over seven million pounds total nitrogen, 900,000 lbs total phosphorus, and nearly 300,000 tons of sediment annually in 2009.²⁶ Looking more closely at the three states with the largest proportion of stormwater-borne pollutants, this source contributes 28% of the nitrogen, 28% of the phosphorus, and 32% of the sediment discharged to the Bay from Maryland; 33% of the nitrogen, 50% of the phosphorus, and 39% of sediment loads in Virginia; and in Pennsylvania, stormwater contributes 33% of the nitrogen, 16% of the phosphorus, and 21% of the sediment. Stormwater loadings of these pollutants from New York, West Virginia and Delaware represent a far less significant portion of their overall loads, lending emphasis to consistent and aggressive efforts to reduce stormwater pollution from the major states.²⁷

Reducing stormwater loadings of nutrients and sediment will require a two-fold effort on the part of EPA and the states. First, states must commit to eliminating, as nearly as possible, discharges of these pollutants from new development and redevelopment projects. Across much of the region, states are making progress toward this goal by updating stormwater permits and regulations to reflect low impact development and green infrastructure approaches. EPA must review these updates for their ability to deliver, in fact, the reductions that they promise in principle. Second, states must commit with equal vigor to programs that will reduce the effectiveness of existing impervious areas. Outside of Maryland and the District of Columbia, there are very few commitments by states to address the significant and permanent flows from existing development. EPA must take assertive steps to ensure that all Bay states make consistent and measureable progress toward stormwater retrofit goals.

A closer look at the WIPs prepared by the three states generating the most stormwater pollution reveals some significant trends and concerns. Current Virginia and Pennsylvania permits and regulations do not effect measureable, objective performance standards for new development and redevelopment projects.²⁸ Again, only Maryland and the District have recognized the necessity of reducing existing imperviousness via retrofit policies. None of the three has fully explored the possible application of residual designation authority to prioritize and increase the extent of developed areas subject to stormwater permitting and regulatory requirements. In its evaluation of their revised WIPs, EPA should seek reasonable assurances that stormwater loadings will be reduced to a level reflective of that set in the backstop TMDLs.

i. Development

Pennsylvania's stormwater regulations require that post-development stormwater volume, quality, and flow rate match pre-development levels, however, this provision is expressed as a narrative standard.²⁹ Based on work with advocates in Pennsylvania and conversations with

²⁶ Draft TMDL at p. 4-27.

²⁷ Draft TMDL at pp. 4-6, 4-7.

²⁸ Pennsylvania relies on a narrative volume control standard that relies on managing the net change from pre-construction to post construction conditions for the 2-year storm event. See, e.g., PA WIP at 86.

²⁹ Pa. Code Title 25, Chapter 102; see PA Draft WIP at 89.

experts familiar with development practice under the Commonwealth's Stormwater Management Act and regulations, the lack of specificity in the standard has led to widespread inconsistencies and frequent abuse. This is, unfortunately, one of the overall frustrations of EPA's stormwater program, as noted by the NRC panel and the Agency itself in its recent MS4 Permit Improvement Manual.³⁰ NRDC echoes EPA's concern over the lack of objectivity and clarity in the narrative approach adopted by Pennsylvania. We fully agree with EPA's assessment that Pennsylvania "*must apply a strong performance standard that is likely to be most effective if based on a volume or flow metric, and formulated as a retention (not detention) standard with the objective of stable hydrologic condition.*"³¹ In fact, we urge EPA to calculate all Bay states' backstop allocations based upon a strong standard for post-construction stormwater discharges from new development and redevelopment, such as a requirement that discharges be managed according to objective, numerically expressed restrictions on post-construction flow, volume and duration.

Virginia assures EPA and the Bay community that impacts from future development will be effectively eliminated through the application of the new stormwater regulations that it expects to implement *after issuance of the TMDL*.³² Ostensibly, these regulations will require that post-construction loadings of nutrients and sediment not exceed levels expected from a generic, undeveloped site.³³ At this stage, it is unclear from Virginia's WIP how (or even whether) these proposed new regulations will actually achieve this goal. EPA must only consider Virginia's WIP as "reasonable assurance" upon demonstration that any revised regulations will meet the same standards of objectivity, measureability, and effectiveness set by other states in the region and recent EPA guidance or technical statements.

Maryland is alone among these three states in adopting regulations that hold stormwater discharges from new development and redevelopment to a clear, hydrologically based standard that requires full consideration and implementation of low impact development management practices. Though concerns remain about the strength of the standards, the State's commitment and ability to enforce compliance with these regulations, and their embrace by the regulated community, Maryland's revised stormwater regulations must be considered by the rest of the Bay community. We encourage EPA to remain closely engaged with MDE staff in order to evaluate the effectiveness of these regulations, and to ensure that they provide measureable benefits in line with the expectations detailed in Maryland's WIP.

ii. Retrofits

Despite the pressing need to reduce stormwater loadings from areas of existing imperviousness, only Maryland and the District of Columbia WIPs contain commitments to undertake stormwater retrofit programs. Both jurisdictions, in their express preference for green infrastructure management practices, provide clear models for the other Bay States to emulate. Even so, and as NRDC has elsewhere expressed, EPA must commit to engaging with these two

³⁰ US EPA, *Municipal Separate Storm Sewer System Permit Improvement Guide*, April 2010.

³¹ US EPA, PA WIP Evaluation Summary, at 2.

³² VA WIP at 76.

³³ *Id.* at 13, 77.

jurisdictions to ensure that retrofits result in meaningful water quality gains, are implemented on schedule and according to watershed prioritization, and are pursued to the maximum extent technically feasible.

Virginia and Pennsylvania, in contrast, present no definite retrofit policies or plans in their WIPs. Virginia's aspirational consideration of cost-share structures to fund BMPs and BMP retrofits has potential to reduce the fiscal implications of a broad retrofit policy, but without a commitment or detailed revenue and organizational scheme is effectively meaningless. As EPA has noted in its critique of Pennsylvania's WIP, restrictions on stormwater generation from future development is not an effective retrofit policy; unfortunately, the Commonwealth has made no effort to create a meaningful retrofit program. We applaud EPA's commitment to base the backstop allocations for both Virginia and Pennsylvania on a requirement that 50% of urban MS4 lands meet aggressive performance standard through retrofit/ redevelopment; 50% of unregulated land treated as regulated, so that 25% of unregulated land meets aggressive performance standard.³⁴ However, we strongly encourage the Agency to pursue commitments from both states to undertake strong retrofit programs, with specific commitments and policies, as part of their final Phase I WIPs.

In exercising its continuing oversight responsibilities and authority, EPA must ensure that measures to reduce impacts from existing imperviousness are implemented consistently across the Bay watershed. The retrofit expectations conveyed by the Agency in its "Urban Stormwater Approach" memorandum should serve as a baseline not just for the states in the region, but for EPA's own review and approval of new or renewed MS4 permits across the watershed.³⁵ MS4 permits must contain locally relevant requirements to develop prioritized, defensible, and achievable retrofit programs, tied to performance standards and enforceable compliance schedules.

iii. Jurisdiction

Throughout the Bay watershed, as with the rest of the nation, a significant portion of the developed landscape falls outside the jurisdictional boundaries of permitted MS4s. As EPA has noted in a related context, increasing the ability of this program to reduce stormwater pollution may depend on expanding this jurisdictional area. We encourage EPA to approach this effort through a two-fold effort: first, as we note above, EPA should consider exercising its own residual designation authority, using the discretion provided by section 402(p)(2)(E) of the Clean Water Act; and second, EPA should insist that all Bay States comply with their RDA obligations, whether as a matter of "reasonable assurance," or in its exercise of its responsibilities under section 117. Maryland, for example, notes that "non-regulated urban" stormwater discharges account for significant portions of its overall nitrogen, phosphorus and sediment loadings.³⁶

³⁴ Draft TMDL at pp. v, vi.

³⁵ US EPA, *Urban Stormwater Approach for the Mid-Atlantic Region and Chesapeake Bay Watershed*, July 2010, at 3-4.

³⁶ MD WIP at ES-6, ES-7.

At a minimum, Clean Water Act section 402(p)(2)(E) stresses the importance of federal and/or state designations of additional areas subject to stormwater management controls when runoff from these areas impairs water quality. At least initially, we agree with EPA's decision to leave RDA designations to the respective Bay States. Nevertheless, EPA should express a clear preference, as well as guidelines or detailed expectations, for the kinds of discharges for which states should consider RDA designations. Moreover, reliance on significant state use of RDA designations is an appropriate way to calculate the backstop TMDL allocations. To the extent that states fail to designate and require permits of areas that are significant contributors of stormwater pollutants, EPA should step in to do so. EPA designations may be an efficient tool for targeting particularly problematic categories of stormwater loading across the Bay watershed. Notably, EPA's exercise of its Residual Designation Authority has the effect of converting stormwater loadings from being Load Allocations to binding, enforceable Waste Load Allocations, implemented through NPDES permits and providing greater assurances that reductions will, in fact, be achieved.

c. Commitments in the Draft WIPs to Reduce Agricultural Loadings Are Inadequate.

NPDES permitting for CAFOs remains a critical regulatory tool for ensuring that these large livestock facilities are designed, operated and managed in a manner which employs the best available technology to eliminate discharges of pollutants to the Bay watershed. Recent amendments to EPA's CAFO regulations, as well as the Agency's May 2010 CAFO permitting guidance, explain EPA expectations of the livestock and nutrient management performance standards for permitted CAFOs, as well as the Agency's interpretation of the CWA permitting obligation for CAFOs that discharge or propose to discharge to waters of the United States. Unfortunately, based on available data, there appear to be significant shortfalls in NPDES permitting for CAFOs in the Bay watershed's most prominent agricultural states. Of the estimated 220 CAFOs in Maryland, only 7 were covered by the state's permit when EPA compiled permitting data this summer. Similarly, though EPA estimates that Virginia has 240 CAFOs according to NPDES definitions,³⁷ none are presently covered by VPDES permits. Additionally, Virginia expects only 116 CAFOs to be subject to VPDES permitting obligations.³⁸ Neither EPA nor VA have identified the reason for this discrepancy or measures to address it. In general, none of the state draft WIPs emphasize specific actions or commitments to expand NPDES permitting of CAFOs or oversight to ensure that all eligible CAFOs are brought under NPDES permits in a timely fashion.

The agricultural components of each state WIP incorporate the 2 Year Milestones for this category of sources. However, as outlined briefly above, there are significant shortfalls in progress toward meeting these goals across all Bay states. Yet none of the draft WIPs account for these shortfalls, or provide reasonable assurance that progress toward meeting the Milestones can be accelerated to make up for current deficiencies in pace. For example, according to an analysis conducted by the Chesapeake Bay Foundation, Virginia is failing to make adequate progress toward its goals for livestock exclusion from streams and the establishment of

³⁷ See NPDES CAFO Rule Implementation Status -- National Summary, Second Quarter 2010, completed 6/30/10 (as reported by EPA Regions), attached.

³⁸ VA Draft WIP at 29.

streamside buffers.³⁹ In its draft WIP, Virginia predicts that adoption of these (and other critical nonpoint source control measures) will reach only single digit levels by 2017.⁴⁰ Inexplicably, VA expects implementation levels to reach nearly 90% by 2025. Nowhere does the Commonwealth respond to current shortfalls in meeting its 2 Year Milestones or explain how it will enact binding commitments to provide reasonable assurances that full implementation levels will, in fact, be met. EPA correctly notes that Virginia “removed all regulatory drivers that could compel increased implementation of priority practices. Lack of regulatory driver may make action levels difficult to meet.”⁴¹ In reviewing the revised Phase I WIPs submitted by Virginia and the other Bay states, EPA must insist on a full accounting of program shortfalls, uncertain regulatory and incentive-based responses, and the commitments necessary to make significant progress toward assurances that these measures will be implemented.

Among the questionable commitments by Bay states, NRDC is particularly concerned about Pennsylvania’s poorly defined efforts to rein in nutrient and sediment loadings associated with the Commonwealth’s large number of small dairies. Pennsylvania’s draft WIP provides a compendium of available federal and state programs that bear on livestock agriculture manure and husbandry practices, and expresses the Commonwealth’s intentions to expand its ability to cooperatively engage with farmers.⁴² However, the WIP does not adequately describe commitments to ensure that small dairies comply with the requirements of Pennsylvania’s Clean Streams Law or the federal Clean Water Act. EPA notes as much in its evaluation of the Commonwealth’s draft WIP; NRDC agrees with this assessment and stresses the need for Pennsylvania to provide reasonable assurance that the cumulative impact of the thousands of small dairies in the state will be redressed through binding commitments implemented in a timely fashion according to prescribed schedules.

d. TMDL Must Contain An Adequate Margin of Safety

As EPA is aware, a TMDL must include a margin of safety that takes into account any lack of knowledge concerning the relationship between pollution controls and water quality.⁴³

i. General Deficiencies in the Margin of Safety

As NRDC understands EPA’s reasoning, conservative assumptions in Chesapeake Bay models significantly reduce the degree of uncertainty that the TMDL’s allocations will be sufficient to lead to compliance with applicable water quality standards, and therefore allow the Agency to opt for an implicit margin of safety (MOS) for nutrients.⁴⁴ However, it is difficult to evaluate the sufficiency of an implicit MOS because EPA did not provide detailed results of the

³⁹ See Letter from Roy Hoagland, Chesapeake Bay Foundation to Shawn Garvin, EP Region 3 Administrator, Aug. 10, 2010, with enclosures.

⁴⁰ See VA Draft WIP at Table 6.4-1.

⁴¹ VA WIP Evaluation at 1.

⁴² See PA WIP at 64-71.

⁴³ CWA § 303(d)(4)(A), 33 U.S.C. § 1313(d)(4)(A), 40 C.F.R. §§ 130.7(c)(1).

⁴⁴ See Draft TMDL at p. 6-13.

calculations behind its three principal sets of conservative assumptions.⁴⁵ For example, the TMDL does not readily describe the extent to which a select set of deep-water and deep-channel DO standards in the mainstem Bay and adjoining embayments can be achieved despite higher loadings in the remaining Bay segments and tributaries.⁴⁶ Despite EPA's confidence in the conservative nature of its allocation approach, the history and difficulty of achieving real pollutant control in the Bay watershed compels the inclusion of explicit MOS, or at very least, incorporation of explicit MOS elements in various TMDL components.

For example, EPA's modeling suggests that, as pollutant loads were reduced, the percent nonattainment for many water bodies consistently declined, "until approximately 1 percent nonattainment."⁴⁷ At this point, the Agency seems to accept that watershed demonstrating 1 percent nonattainment "were considered to be in attainment for a segment's designated use for purposes of developing the Chesapeake Bay TMDL."⁴⁸ The persistence of water quality violations -- or, perhaps more accurately, the persistence of modeling results suggesting water quality violations in these waters may not be conclusively eliminated by current allocations -- demonstrates the need for marginally reduced allocations.

Similarly, the difference in nutrient effectiveness delivered by the Bay's northern and southern tributaries injects a degree of bias into the allocations system. Reductions achieved in the Susquehanna and other northern tributaries have greater beneficial impact on the Bay health than similar reductions achieved in the York, James and other more southerly tributaries.⁴⁹ EPA must account for these differences in effectiveness ratios in any interstate or interbasin trading programs by insisting on a greater than 1:1 credit-offset ratio when credits from less effective watersheds are applied in those with higher effectiveness ratios. This variability in the relative effectiveness of reductions is another reason to include an explicit MOS.

As a first step, NRDC suggests that the 5% temporary reserve identified by EPA should be retained, and incorporated into revised allocations as an explicit Margin of Safety.

ii. Lack of Margin of Safety to Account for Climate Change

EPA notes that climate change effects have not been explicitly accounted for in the TMDL "because of staff resource and time constraints and known limitations in the current suite of Bay models to fully simulate the effects of climate change."⁵⁰ Instead, EPA claims climate change is adequately addressed because of an implicit margin of safety for nutrient loading and an explicit margin of safety for sediment loading.⁵¹

⁴⁵ *See id.*

⁴⁶ *Id.*

⁴⁷ Draft TMDL at p. 6-11.

⁴⁸ *Id.*

⁴⁹ *See* TMDL at 6-19 to 6-23

⁵⁰ Draft TMDL at p. 5-41.

⁵¹ *Id.* at § 6.2.3.

For nutrient loading, the TMDL's conclusions regarding a predicted relative decline in flows and nutrient loads on an annual basis due to climate change do not appear to be consistent with EPA's recent draft Method to Assess Climate Relevant Decisions: Application in the Chesapeake Bay.⁵² EPA should explain these apparent inconsistencies.

For sediment loading, EPA recognizes that under a changing climate, "increased precipitation and its related flows may increase sediment loads."⁵³ However – despite claims of an explicit margin of safety – there are no data presented that quantify the alleged explicit margin of safety with regard to this potential increase in sediment loads due to climate change. At best, the margin of safety appears to be designed to overcome "overly optimistic" observations in model results compared to current conditions.⁵⁴ The TMDL also appears to reference a margin of safety in the underlying water quality standards for SAV-water clarity.⁵⁵ Under either scenario, the margin of safety does not address increased sediment load related to climate change, but only focuses on the historic record, the state WIPs, and compensating for model shortcomings. The methodology described in § 6.4.2 also fails to account for or explain the limits of stationarity in the context of a changing climate. For these reasons, the margin of safety for sediment is inadequate.⁵⁶

Finally, EPA states that the 2017 assessment of implementation progress will include an explicit assessment of climate change influences.⁵⁷ Yet the TMDL does not indicate that the 2017 climate change assessment will result in modifications to the TMDL, and even if it did, this future adaptive management approach does not relieve the Agency of its legal obligation to include an adequate margin of safety in an adopted TMDL – particularly where EPA has data to show likely increases in sediment load due to climate change.⁵⁸

By not including an adequate margin of safety in the allocations being adopted now, EPA risks seriously underestimating the additional pollution loadings that will result from climate change, rendering the proposed allocations insufficient to meet the water quality standard and insufficient to comply with legal requirements for an adequate margin of safety.

6. Nutrient Credit Generation, Banking & Trading

⁵² Compare TMDL at E-5 with U.S. EPA, *Method to Assess Climate Relevant Decisions: Application in the Chesapeake Bay* (Draft, June 2010) at 20-21 (discussing climate drivers) and 47 (discussing POTW nutrient management)

⁵³ Draft TMDL at p. E-5.

⁵⁴ *Id.* at p. 6-14.

⁵⁵ *Id.* at p. 6-48.

⁵⁶ CWA § 303(d)(4)(A), 33 U.S.C. § 1313(d)(4)(A), 40 C.F.R. §§ 130.7(c)(1). "Stationarity" reflects the idea that natural systems fluctuate within an unchanging envelope of variability. *See, e.g.,* U.S. EPA, *Climate Change Vulnerability Assessments: A Review of Water Utility Practices*, at 2 (Aug. 2010); *see also*, Milly, P.C.D., J. Betancourt, M. Falkenmark, R.M. Hirsch, Z.W. Kundzewicz, D.P. Lettenmaier, and R.J. Stouffer, *Stationarity is dead: Whither water management?*, *Science* 319:573-574 (2008).

⁵⁷ Draft TMDL at p. 5-41.

⁵⁸ CWA § 303(d)(1)(C), 33 U.S.C. § 1313(d)(1)(C); APA § 706(2), 5 U.S.C. § 706(2).

Over the last 7 years EPA has taken several steps toward developing a credible, enforceable framework for nutrient credit trading in the Chesapeake Bay. NRDC commends the Agency's effort to ensure that nutrient trading programs are accountable and quantifiable, designed to facilitate compliance with TMDL requirements without risk of increased pollution loadings to impaired waters.

a. General Observations About Nutrient Trading

NRDC believes that the Chesapeake Bay TMDL is a good opportunity to demonstrate that a nutrient trading program, subject to strict oversight and carefully-crafted rules keyed to environmental performance targets, can help make a regulatory program function more economically efficiently. Trading is a locally appropriate tool to clean up the bay as it builds on unparalleled scientific research, modeling and data. NRDC does not endorse trading wholesale; rather, we hope that EPA and Bay states will demonstrate that a trading program does not undercut other critical water pollution goals by exacerbating local pollution problems or reducing the certainty that pollution reductions will take place. As with other elements of the Bay Program, successful work on offsets and trading in the Chesapeake Bay could serve as a powerful model to consider in other watersheds.

Trading arises in the TMDL in a few different contexts. First, because the TMDL does not provide an explicit allocation for new or increased sources of nutrients or sediment, any additional discharge of these pollutants would need to be offset by reductions elsewhere in order to be permitted.⁵⁹ Second, because meeting the TMDL will require significant pollution reductions throughout the watershed, there is widespread interest in, and significant support for, a trading program that can help sources achieve needed reductions in an economically efficient manner. EPA says that it "recognizes that a number of Bay jurisdictions are already implementing water quality trading programs. EPA supports implementation of the Bay TMDL through such programs, as long as they are established and implemented in a manner consistent with the CWA, its implementing regulations," and a pair of EPA guidance documents.⁶⁰ Finally, given that the problems the TMDL seeks to address are interstate in nature, EPA envisions taking steps to facilitate broad-scale trading. As the Agency observes, "EPA recognizes the value of implementing a strategy for offsets that, wherever possible, is consistent among the jurisdictions to increase credibility, scalability, and broader regional implementation such as interstate trading."

⁵⁹ See 40 C.F.R. § 122.4(i); *Friends of Pinto Creek v. U.S. EPA*, 504 F.3d 1007, 1014.

(9th Cir. 2007) ("If point sources, other than the permitted point source, are necessary to be [controlled] in order to achieve the water quality standard, then the EPA must locate any such point sources and establish compliance schedules to meet the water quality standard before issuing a permit. If there are not adequate point sources to do so, then a permit cannot be issued unless the state or [proposed source] agrees to establish a schedule to limit pollution from a nonpoint source or sources sufficient to achieve water quality standards.").

⁶⁰ Draft TMDL at p. 10-3.

In general, NRDC believes that these different policy strands should be unified. That is, EPA should use its oversight of the state plans to meet the TMDL allocations and of state-issued permits to ensure that offsets for new growth and trades to meet reduction targets both operate by the same rules – rules that ensure transparency, accountability, scientific integrity, and consistency between jurisdictions. We believe that the circumstances are appropriate in the Chesapeake Bay for EPA to authorize interstate trades, so long as it provides detailed guidance for acceptable trades.

Appendix S, “Offsetting New or Increased Loadings of Nitrogen, Phosphorous and Sediment to the Chesapeake Bay Watershed”, and Section 10, TMDL Implementation and Adaptive Management, outline broad expectations for offset programs within and between Bay states. NRDC strongly supports the use of a comprehensive set of definitions, common elements and program features that guide trading among both new and existing sources of nitrogen and phosphorous. Clear, rigorous and consistent rules will help maintain the integrity of a trading system while fostering market clarity and stability. The principles outlined in Appendix S, in combination with many strong elements in EPA trading policies, should be implemented to make sure that trading contributes to, and does not undermine, progress toward meeting the TMDL goals.

A Bay nutrient trading market will build on existing and pending state programs and help states and sectors more cost-effectively achieve TMDL nutrient pollution limits. However, while NRDC supports consistent application of definitions and programmatic requirements, we believe that nitrogen and phosphorus should be the primary focus of the trading programs. Until proven systems are up and running and there is more science and data to evaluate program effectiveness, cross-nutrient trading and sediment trading is premature. Because Pennsylvania is the only state that currently includes sediment in its trading program, that program feature should remain distinct from the comprehensive system and be utilized for program evaluation. With respect to nitrogen-for-phosphorus trading, EPA indicated that states could propose exchanging phosphorus and nitrogen loads, based on modeled impacts on the Bay.⁶¹ Based on our review of this discussion, there appears to be a wide variability in the nitrogen-for-phosphorus exchange ratio, depending on total phosphorus delivered, and EPA’s suggested ratios only account for the expected tradeoffs on both ends of the range. In view of these uncertainties, NRDC believes that EPA should discourage, not encourage, the use of inter-pollutant trades at this juncture.

b. Responses to Specific Trading Issues Raised By EPA

i. Trading Must be Protective of Water Quality.

NRDC strongly supports EPA’s position that trading may only be used as a tool to improve water quality and that “trades do not cause or contribute to an exceedance of WQS in either receiving segment or anywhere else in the Bay watershed.”⁶² NRDC also concurs with EPA’s position that trading must not delay or weaken implementation of the TMDL and that loadings covered by a trade may not exceed applicable loading caps established by the TMDL.

⁶¹ Draft TMDL at pp. 6-44 to 6-45.

⁶² *Id.* at p. 10-3.

ii. Baselines for Creating Tradeable Credits Must Account for All Applicable Requirements.

The proposed definition of offset baseline as the “amount of pollutant loading allowed by a wasteload or load allocation” is significant. Having a clearly understood and enforceable baseline is a fundamentally necessary element of a credible program and NRDC supports EPA’s approach.⁶³ NRDC supports numeric baselines for credit generators rather than suites of best management practices (BMPs). In the absence of a numeric baseline it is much more difficult to verify that BMPs are achieving results. In its Guide for EPA’s Evaluation of Phase I Watershed Implementation Plans, the Agency asks each jurisdiction to ensure that offsets account for “attainment of the Bay TMDL or local water quality baseline by the generator of the offset.”⁶⁴ NRDC supports this approach.

In Appendix S, EPA establishes minimum controls for point source credit users as “relevant minimum technology-based standards or secondary treatment standards.” NRDC agrees with this position; the Clean Water Act’s success in large measure is attributable to the consistent application of technology-based standards, and we would not support trading out of such obligations.

iii. Credit Calculation and Verification Protocols Must be Rigorously Scientific.

NRDC supports EPA’s approach of requiring appropriate metrics and verification systems to ensure that credits are producing expected reductions. Equivalency, distance accounting and accounting for overall uncertainty may require margins of safety in both allocations and trading ratios. Pages 19-23 in Section 6 of the TMDL draft discuss the Agency’s conclusion that all pollution reductions are not equivalent. For example, “[n]orthern, major river basins have greater relative influence than southern major river basins, because of the general circulation patterns of the Chesapeake Bay...” Likewise, “[r]iver basins whose loads discharge directly to the mainstem Bay, like the Susquehanna, tend to have more effect on the mainstem Bay segments than basins with long riverine estuaries (e.g., the Patuxent and Rappahannock rivers).” In view of these observations, the trading program within the Bay needs to account for relative influence; for instance, if credits generated in less influential watersheds are used to offset growth in more influential ones, the Agency needs to secure a greater than 1:1 trading ratio.

⁶³ U.S. EPA Office of Water, *Water Quality Trading Policy* (Jan. 13, 2003), available at <http://water.epa.gov/type/watersheds/trading/finalpolicy2003.cfm> (hereinafter “EPA Water Quality Trading Policy”) (“the baselines for generating pollution reduction credits should be derived from and consistent with water quality standards”).

⁶⁴ U.S. EPA, *A Guide for EPA’s Evaluation of Phase I Watershed Implementation Plans*, at 4 (Apr. 2, 2010), available at http://www.epa.gov/reg3wapd/pdf/pdf_chesbay/GuideforEPAWIPEvaluation4-2-10.pdf.

As noted in Appendix S, monitoring is an important way of verifying that reductions used as credits actually occur. NRDC would go a step further; in general, we believe that, in order to create a tradable credit, the generator should monitor current conditions and then keep on monitoring to be sure the credit is in fact generated. If there are challenges to monitoring certain source categories EPA should issue guidance to establish appropriate monitoring protocols.⁶⁵

At a bare minimum, if EPA intends to permit credit generation in the absence of monitoring data, it is necessary to follow the Agency's suggestion (in section 5(a)(ii) of Appendix S) that using an increased trading ratio to account for a lack of monitoring. In this circumstance, significant compliance assurance efforts (regular inspections, etc.) are even more necessary. In addition, a trading ratio of some size would also create an appropriate margin of safety for those states that are relying on trading significantly to achieve the TMDL allocations.

iv. EPA Must Insist on Safeguards to Provide Assurance that Trades do not Undermine TMDL Compliance.

NRDC supports the inclusion of safeguards to ensure that water quality is protected. However, the policy reflected in Appendix S only "restricts" the use or generation of offsets by an unpermitted point source not in compliance with its NPDES permit or other legal requirement. NRDC believes that non-compliant entities should not be permitted to use or create offsets, because a trading program relies on full compliance by participants for its success. This policy should be clarified to "prohibit the use or generation of offsets by an unpermitted point source or source not in compliance with NPDES or a jurisdiction equivalent, or other federal or state law or regulation."⁶⁶

NRDC also suggests that all Chesapeake Bay watershed waters have objective numeric nitrogen and phosphorus criteria, or other criteria backed by well-understood guidance that translates them into numeric nitrogen and phosphorus targets, in place before allowing buyers within these waters to purchase credits towards meeting the Bay TMDL allocations or allowing credit generation within such waters. We suggest that states be required to put such criteria in place before trades begin, as those criteria are essential to any critical and objective evaluation of whether a given trading transaction will cause or contribute to a water quality standards violation.

⁶⁵ Cf. U.S. EPA, *Guidelines for Reviewing TMDLs Under Existing Regulations Issued in 1992*, available at <http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/final52002.cfm> ("EPA's 1991 document, Guidance for Water Quality-Based Decisions: The TMDL Process (EPA 440/4-91-001), recommends a monitoring plan to track the effectiveness of a TMDL, particularly when a TMDL involves both point and nonpoint sources, and the WLA is based on an assumption that nonpoint source load reductions will occur. Such a TMDL should provide assurances that nonpoint source controls will achieve expected load reductions and, such TMDL should include a monitoring plan that describes the additional data to be collected to determine if the load reductions provided for in the TMDL are occurring and leading to attainment of water quality standards.").

⁶⁶ See EPA Water Quality Trading Policy ("EPA recommends that states and tribes consider the role of compliance history in determining source eligibility to participate in trading.").

v. Certification and Enforceability Mechanisms Are Essential.

EPA outlines a number of important certification and enforcement mechanisms in section 7 of Appendix S. NRDC supports EPA's approach. Having states estimate the increased pollutant loading from nonpoint sources and discharges from point sources that will not be permitted and acquiring offsets needed to fully offset such increases will be necessary in order to stay on track. We believe that the information must be clearly recorded in an instrument that is also publicly reviewable and that periodic review inspection and auditing occur to ensure that the estimates are an accurate reflection of actual loads.

Additionally, while NRDC believes that offsets and other trades must be reflected in permitted sources' NPDES permits, we also believe that offsets may occur without reopening or modifying a permit. Instead, EPA policy should ensure that credits and trade requirements are incorporated directly or by reference into enforceable permit requirements under the NPDES system established under section 402 or state permitting authority for all credit purchasers covered by such permits. This permitting approach would allow trading to occur without requiring the reopening or reissuance of permits to incorporate individual trades, but would incorporate any such trades directly or by reference as enforceable terms of those permits once the credit purchase has been approved by the permitting agency.⁶⁷ Additional provisions to ensure that the buyer is responsible for making pollution reductions if the credits purchased are not realized are necessary.⁶⁸

To further support transparency and enforceability, EPA should develop model permit provisions for state use that allow for trades to occur during the term of the permit without reopening it, so long as the credit user remains responsible in its permit for any failure (including a failure by the credit generator) to meet WQBELs/WLAs, and the permit obliges the user to monitor, track, and report publicly on the use of the credit and the continuing validity of the credit. Finally, private contracts between credit buyers and sellers must contain adequate enforceability provisions and all agreements between offset generators and users should be civilly enforceable.

vi. Trading Can Only Support the TMDL If the System Requires Fully Accountable and Transparent Trades.

An accountable, trackable permit system must be in place in order to achieve meaningful results. Requirements to ensure that offsets are quantified and verified, that the location of the offset is established, that offsets not be sold more than once, and that offsets are reviewed and monitored are essential. Appendix provision 8(b) should be strengthened to ensure uniform

⁶⁷ See *id.* ("EPA does not expect that an NPDES permit would need to be modified to incorporate an individual trade if that permit contains authorization and provisions for trading to occur and the public was given notice and an opportunity to comment and/or attend a public hearing at the time the permit was issued.").

⁶⁸ See *id.* ("In the event of default by another source generating credits, an NPDES permittee using those credits is responsible for complying with the effluent limitations that would apply if the trade has not occurred.").

basin-wide standards that are consistent with minimum EPA guidelines, not simply “standards established by the jurisdiction.” Provision 8(i) likewise should be improved to require the demonstration of sufficient offsets being acquired over the period of increased or new loading.

In addition, while the need for accountability and transparency is referenced in EPA’s policy, the current language is vague. The final TMDL should require a publicly accessible registry of trades and include explicit inspection, monitoring and auditing protocols.⁶⁹ The registry should record information used in the certification and verification process and the trading transaction information on creation, sale, amounts and use of credits. Finally, third party verification and certification of credits should be provided for under both state and interstate trading programs.

vii. Over-Reliance on Trading and Offsets Does Not Provide Reasonable Assurance.

EPA’s approach to reasonable assurance highlighted another important programmatic element discussed in pages 6-7 in Section 8. In finding that the draft state WIPs failed to provide reasonable assurance that programs would achieve reduction targets, EPA included concerns about overreliance on insufficiently developed trading programs. NRDC supports EPA’s view that it can, in the name of reasonable assurance, adjust allocations where state WIPs are too speculative in one of several ways, including “[h]eavy reliance on trading to finance reductions and offset growth, but no commitment to adopt critical trading components such as clear baselines, liability, enforceability, tracking, and regulatory drivers.”⁷⁰

c. Comments on State WIPs’ Discussion of Trading and Offsets

Pennsylvania

Pennsylvania has done significant work to develop its state nutrient trading program and openly encourages EPA and other states to build on its groundwork. While there is much to be learned from Pennsylvania’s pioneering work, NRDC does not support the baseline approach used by the state and encourages EPA to develop a consistent baseline approach throughout the watershed.

Pennsylvania’s program specifies that its “baseline includes compliance with the erosion and sedimentation requirements for agricultural operations in Chapter 102 (relating to erosion and sediment control), the requirements for agricultural operations under § 91.36 (relating to pollution control and prevention at agricultural operations), § 92a.29 (relating to CAFOs) and the requirements for agricultural operations under Chapter 83, Subchapter D (relating to nutrient management), as applicable.”⁷¹ Additional “threshold” requirements are included, such as: “[m]anure is not mechanically applied within 100 feet” of various surface waters; “[a] minimum of 35 feet of permanent vegetation is established between the field” and such waters; or the

⁶⁹ *See id.* (“EPA supports public participation at the earliest stages and throughout the development of water quality trading programs to strengthen program effectiveness and credibility.”)

⁷⁰ TMDL at p. 8-7.

⁷¹ 25 Pa. Code § 96.8(d)(2)(i)

reduction credit claimed for the activity is discounted by 20%.⁷² The reductions resulting from many of these practices are difficult to account for and enforce and do not ensure that actual pollutant reductions are met.

In addition, Pennsylvania's WIP further explains that compliance with nutrient management plans will be determined by money spent and complaint-driven audits. Without verification of nutrient application practices and auditing of plan implementation, these requirements are woefully insufficient to guarantee pollution reductions.

NRDC believes that EPA should insist that Pennsylvania adjust its trading baseline to be a numeric one. We understand that the credit generation process – at least with respect to nonpoint sources -- will be somewhat predictive and thus needs to include several safeguards,⁷³ and should incorporate monitoring mechanisms to verify reductions later. However, we do not believe that credits can solely be based on estimated reductions, so some mechanism to establish a numeric baseline prior to the credit-generating activity and verifying the reductions afterwards needs to be part of EPA's review of the reliability of state trading regimes and the Agency should object to permits that rely on trades that are unreliable or that are otherwise inconsistent with the TMDL.

Additionally, Pennsylvania's WIP relies heavily on expansion of nutrient trading opportunities to achieve compliance in the stormwater sector. As discussed above, trading in sediment is still nascent and data have not yet established clear programmatic results. It is premature for Pennsylvania to rely on trading to achieve sediment reductions for stormwater.

Maryland

Maryland has done considerable work to develop its own trading policies. NRDC applauds Maryland's use of the local water quality standard of the TMDL as the baseline. NRDC also supports Maryland's pioneering approach to WWTP, requiring upgrades such that WWTP in Maryland may become a source of credits, rather than a purchaser, as envisioned in other state WIPs.

District of Columbia

The District is not expecting additional growth from development so redevelopment is the primary focus. Population growth will stretch WWTP capacity. The current WIP utilizes a growth allocation (rather than offsets) expected to be used to increase capacity at Blue Plains. Although the District indicates that it does not expect increased loadings from its stormwater

⁷²*Id.* § 96.8(d)(3).

⁷³ See EPA Water Quality Trading Policy ("EPA supports a number of approaches to compensate for nonpoint source uncertainty. These include monitoring to verify load reductions, the use of greater than 1:1 trading ratios between nonpoint and point sources, using demonstrated performance values or conservative assumptions in estimating the effectiveness of nonpoint source management practices using site- or trade-specific discount factors, and retiring a percentage of nonpoint source reductions for each transaction or a predetermined number of credits.").

system, NRDC believes this may be over-optimistic; urban stormwater pollution may increase due to increased precipitation and runoff associated with climate change, an impact that EPA acknowledges the TMDL does not significantly address.

Delaware

Delaware does not yet have an offset policy and notes that it needs to develop one in order to provide adequate accountability. This is particularly true since the state views offsets as a “key element in achieving both water quality and quantity goals in this watershed and throughout Delaware.”⁷⁴ NRDC supports Delaware’s outlined approach to establishing baselines that require specific performance measures that are at least as stringent as WLA or LA in the TMDL. We also support many other elements of the Delaware framework, as described in its WIP, though the program is candidly not yet developed in any detail. Currently there is no clear identification of a program to assure baseline compliance for nonpoint sources. The WIP notes the need for such a program for the Phase II WIP, but this effort should be fast-tracked before EPA approves participation in trading.

Virginia

NRDC concurs with EPA’s critique that Virginia’s WIP is heavily reliant on achieving nutrient reductions through trading (an expanded Nutrient Credit Exchange), but that programmatic elements to ensure that reductions actually occur are lacking. In particular, clear baselines and enforceable standards must be in place for stormwater before EPA can base its reasonable assurance conclusion on the expansion of trading. EPA’s substantive guidance also is needed to provide the state Assembly with direction about the needed components of any effort to expand the nutrient trading program.

West Virginia

West Virginia supports the use of offsets to accommodate growth but there is little detail included on program design or baselines. NRDC supports their position that offsets should be based on delivered loads rather than edge of stream loads to ensure accuracy.

New York

New York takes a conservative approach to offsets. The state’s WIP notes, and NRDC agrees, that a strong process to verify and track offsets must be in place before relying on nonpoint source reductions to counterbalance point source increases.

New York is exploring the use of mass balance analysis as a tool for measuring nutrient flows from agricultural operations through a pilot project with the Upper Susquehanna Coalition and Cornell. This program could be a useful tool for establishing and monitoring baseline data on nutrients at the farm level.

⁷⁴ Chesapeake Interagency Workgroup, *Delaware’s Phase I Chesapeake Bay Watershed Implementation Plan*, at 69 (Draft Sept. 1, 2010).

Finally, NRDC believes that New York's suggestion that it would achieve "elimination of septic discharges by connection" as a way of offsetting growth in wastewater treatment plants' increased discharge is a reasonable one. Such offsets, of course, need to be consistent with the various principles articulated elsewhere in these comments, in that they must be quantifiable, rigorously and publicly verified, accounted for in the load allocation, and surplus to other requirements (including any program that may exist in the state to promote sewer connection).

Conclusion

NRDC appreciates this opportunity to provide input on EPA's Draft TMDL for the Chesapeake Bay. We look forward to the measured and deliberate restoration of the Bay that the TMDL will foster.

Respectfully submitted,

A handwritten signature in dark ink, appearing to be "JD", with a long horizontal stroke extending to the right.

Jon P. Devine, Jr.
Senior Attorney, Water Program

encl.